CLAIMS

What is claimed is:

1. A method for forming an opto-electronic device, comprising:

providing a substrate and an opto-electronic layer thereon; and

forming an electric conductive element on said opto-electronic layer ; and

forming an ohmic contact between said electric conductive element and said opto-electronic layer at a temperature lower than 250 degrees centigrade.

2. The method according to claim 1, wherein said step for providing said substrate provides an opaque substrate.

3. The method according to claim 1, wherein said ohmic contact is formed at the temperature being lower than 200 degrees centigrade.

4. The method according to claim 1, wherein said ohmic contact is formed at the temperature being higher than 100 degrees centigrade and lower than 175 degrees centigrade.

5. The method according to claim 1, wherein said ohmic contact between said electric conductive element and said opto-electronic layer is formed through a solid state growth process.

6. The method according to claim 1, wherein said step for forming said electric conductive element forms said electric conductive element by selecting the material from the group consisted of Ni, Pd, Ge, Si, Se, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

7. The method according to claim 1, wherein said step for forming said electric conductive element forms said electric conductive element by selecting the material from the group consisted of Ni, Pd, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

8. The method according to claim 1, wherein said step for providing said opto-electronic layer comprises to form a plurality of semiconductor layers.

9. The method according to claim 8, comprising forming said electric conductive element on a n-type doped semiconductor layer of said opto-electronic layer, wherein said electric conductive element is selected from the group consisted of Ni, Pd, Ge, Si, Se, Au, Ag, Pt, AiAg, AgPt, AuPt and AuAgPt.

10. The method according to claim 8, comprising forming said electric conductive element on a p-type doped semiconductor layer of said opto-electronic layer, wherein said electric conductive element is selected from the group consisted of Ni, Pd, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

11. The method according to claim 1, wherein said electric conductive element comprises a plurality of electrodes.

12. The method according to claim 10, wherein said step for providing said substrate and said opto-electronic layer thereon comprises:

forming a first semiconductor layer on said substrate;

forming an active layer onto said first semiconductor layer; and

forming a second semiconductor layer onto said active layer.

13. The method according to claim 12, wherein said step for forming said electric conductive element comprising:

removing portions of said first semiconductor layer and said active layer to

expose portions of said second semiconductor layer; and

forming said electric conductive element on said first semiconductor layer and said exposed second semiconductor layer.

14. The method according to claim 13, comprising to form a n-type doped semiconductor layer to be said first semiconductor layer.

15. The method according to claim 13, comprising to form a p-type doped semiconductor layer to be said first semiconductor layer.

16. The method according to claim 13, comprising to form a n-type doped semiconductor layer to be said second semiconductor layer.

17. The method according to claim 13, comprising to form a p-type doped semiconductor layer to be said second semiconductor layer.

18. The method according to claim 1, wherein said step for providing said substrate provides a transparent substrate.

19. The method according to claim 18, wherein said step for providing said transparent substrate forms said transparent substrate by selecting the material from the group consisted of glass, silicon, epoxy resin, poly methyl methacrylate, acrylonitrile butadiene styrene copolymer resin, and polymethyl methacrylate and sapphire.

20. The method according to claim 18, wherein said step for providing said transparent substrate forms said transparent substrate by selecting the material from the group consisted of polysulfones, polyethersulfones, polyetherimides, polyimides, polyamide-imide, polyphenylene sulfide and silicon-carbon thermosets.

21. The method according to claim 18, wherein said step for forming said electric conductive element forms said electric conductive element by selecting the material from the group consisted of Ni, Pd, Ge, Si, Se, Au, Ag, Pt, AiAg, AgPt, AuPt and AuAgPt.

22. The method according to claim 18, wherein said step for forming said electric conductive element forms said electric conductive element by selecting the material from the group consisted of Ni, Pd, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

23. The method according to claim 18, wherein said step for providing said substrate comprises to adhere an adhesive layer on said opto-electronic layer to be said transparent substrate.

24. The method according to claim 18, wherein said step for providing said substrate comprises to adhere said opto-electronic layer on said transparent substrate by an adhesive layer.

25. The method according to claim 24, wherein said step for adhering said opto-electronic layer on said transparent substrate by said adhesive layer selected the material from the group consisted of epoxy resin, acrylonitrile butadiene styrene copolymer resin and polymethyl methacrylate.

26. The method according to claim 24, wherein said step for adhering said opto-electronic layer on said transparent substrate by said adhesive layer selected the material from the group consisted of polysulfones, polyethersulfones, polyetherimides, polyimides, polyamide-imide, polyphenylene sulfide and silicon-carbon thermosets.

27. A solar cell comprising an opto-electronic device formed by a method for forming an opto-electronic device according to claim 1.

28. A light sensor comprising an opto-electronic device formed by a method for forming an opto-electronic device according to claim 1.

29. A method for forming an opto-electronic device, comprising:

providing a substrate ;

forming an opto-electronic layer on said substrate;

forming a transparent substrate on said opto-electronic layer and removing said substrate ;

forming an electric conductive element on said opto-electronic layer ; and

forming an ohmic contact between said electric conductive element and said opto-electronic layer at a temperature lower than 250 degrees centigrade.

30. The method according to claim 29, wherein said ohmic contact between said electric conductive element and said opto-electronic layer is formed through a solid state growth process.

31. The method according to claim 29, wherein said ohmic contact is formed at the temperature being lower than 200 degrees centigrade.

32. The method according to claim 29, wherein said ohmic contact is formed at the temperature being higher than 100 degrees centigrade and lower than 175 degrees centigrade.

33. The method according to claim 29, wherein said step for forming said electric conductive element forms said electric conductive element by selecting the material from the group consisted of Ni, Pd, Ge, Si, Se, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.